CLAIMS

We claim:

1. A monoclonal antibody which binds to a polyethylene glycol molecule or a polyethylene glycol moiety of a polyethylene glycol-containing compound.

2. The monoclonal antibody of claim 1, wherein said monoclonal antibody is derivatized.

3. The monoclonal antibody of claim 2, wherein said monoclonal antibody is biotinylated.

4. The monoclonal antibody of claim 2, wherein said monoclonal antibody is labeled with a radioisotope.

5. The monoclonal antibody of claim 4, wherein said radioisotope is selected from the group consisting of ^{125}I and ^{131}I.

6. The monoclonal antibody of claim 2, wherein said monoclonal antibody is conjugated to an enzyme which converts a substrate into a detectable product.

7. The monoclonal antibody of claim 6, wherein said enzyme is horse-radish peroxidase.

8. A hybridoma cell line producing a monoclonal antibody which binds to a polyethylene glycol molecule or a polyethylene glycol moiety of a polyethylene-glycol-containing compound.

9. A method of producing a monoclonal antibody which binds to a polyethylene glycol molecule or a polyethylene glycol moiety of a polyethylene-glycol-containing compound, comprising the steps of:

a) producing a immunogenic compound comprising a polyethylene glycol moiety and an immunogenic moiety;

b) immunizing a mouse with said immunogenic compound; and

c) producing a hybridoma by fusing a spleen cell from said immunized mouse with a myeloma cell.

10. The method of claim 9, wherein said immunogenic moiety of said immunogenic compound is beta-glucuronidase.

11. The method of claim 9, wherein said immunogenic compound further comprises a murine monoclonal antibody moiety linked to beta-glucuronidase.

12. The method of claim 11, wherein said murine antibody moiety is monoclonal antibody RH1, which is an IgG_{2a} type and binds to an antigen expressed on the surface of AS-30D rat hepatoma cells.

13. A method for identifying or measuring the concentration of a polyethylene glycol or a polyethylene-glycol-containing compound, comprising the steps of:

a) obtaining a sample to be identified; and

b) measuring the amount of polyethylene glycol or polyethylene glycol-containing compound by contacting a monoclonal antibody which binds to polyethylene glycol with the said sample and measuring the amount of polyethylene glycol or polyethylene-glycol-containing compound bound to the monoclonal antibody.

14. The method of claim 13, wherein said step b is performed by immunoblotting.

15. The method of claim 13, wherein said step b is performed by enzyme-linked immunosorbent assay (ELISA).

16. The method of claim 13, wherein said step b is performed by radioimmunoassay.

17. The method of claim 13, wherein said sample is a sample of the human body fluid.

18. A method for identifying or measuring the concentration of a polyethylene glycol or a polyethylene-glycol-containing compound, comprising the steps of:

a) coating a solid support with a first portion of a monoclonal antibody that binds polyethylene glycol;

b) contacting said monoclonal antibody on the solid support with polyethylene glycol or a polyethylene-glycol-containing compound;

c) contacting the captured polyethylene glycol or polyethylene-glycol-containing compound with a second portion of said monoclonal antibody that has been previously radiolabeled, linked to an enzyme or derivatized with biotin; and

d) measuring the amount of said bound antibody.

19. A composition comprising the monoclonal antibody of claims 1 and a pharmaceutically acceptable carrier.

20. The monoclonal antibody of claim 1, wherein said monoclonal antibody is an IgM.

21. A method of accelerating the clearance of a polyethylene glycol-containing compound in the blood circulation of a patient who was previously administered with said

polyethylene glycol-containing compound, comprising the step of administering to said patient a pharmaceutical composition comprising an anti-polyethylene glycol antibody.

22. The method of claim 21, wherein said anti-polyethylene glycol antibody is administered to said patient less than 10 days after administering said polyethylene glycol-containing compound to said patient.

23. The method of claim 21, wherein said anti-polyethylene glycol antibody is administered to said patient less than 5 days after administering said polyethylene glycol-containing compound to said patient.

24. The method of claim 21, wherein said anti-polyethylene glycol antibody is administered to said patient from 24 hours to 5 days after administering said polyethylene glycol-containing compound to said patient.

25. The method of claim 21, wherein said polyethylene glycol-containing compound comprises β-glucuronidase.

26. The method of claim 21, wherein said anti-polyethylene glycol antibody is an anti-polyethylene glycol monoclonal antibody.

27. The method of claim 26, wherein said monoclonal antibody is an IgM.

28. The method of claim 21, wherein said anti-polyethylene glycol antibody is derivatized with galactose so as to be targeted by an asialoglycoprotein receptor on a hepatocyte and internalized by said hepatocyte.

29. A method of treating a patient suffering from a tumor, comprising the steps of:

a) administering a polyethylene glycol-containing conjugate comprising tumor targeting means and means for activating an anti-tumor prodrug to said patient;

b) administering an anti-polyethylene glycol antibody to said patient to accelerate the clearance of said polyethylene glycol-containing compound from the blood circulation of said patient after step a; and

c) administering said anti-tumor prodrug to said patient after step b.

30. The method of claim 29, wherein said anti-polyethylene glycol antibody is administered to said patient less than 10 days after administering said polyethylene glycol-containing conjugate to said patient.

31. The method of claim 29, wherein said anti-polyethylene glycol antibody is administered to said patient less than 5 days after administering said polyethylene glycol-containing conjugate to said patient.

32. The method of claim 29, wherein said anti-polyethylene glycol antibody is administered to said patient from 24 hours to 5 days after administering said polyethylene glycol-containing conjugate to said patient.

33. The method of claim 29, wherein said means for activating an anti-tumor drug is β-glucuronidase.

34. The method of claim 29, wherein said anti-polyethylene glycol antibody is an anti-polyethylene glycol monoclonal antibody.

35. The method of claim 34, wherein said monoclonal is a IgM.

36. The method of claim 29, wherein said anti-polyethylene glycol antibody is derivatized with galactose so as to be targeted by an asialoglycoprotein receptor on a hepatocyte and internalized by said hepatocyte.

37. The method of claim 29, wherein said anti-tumor prodrug is tetra n-butyl ammonium salt of a glucuronide derivative of p-hydroxyaniline mustard.

38. A monoclonal antibody which binds to an epitope comprising a -[OCH_2CH_2]- moieties.

39. A hybridoma producing a monoclonal antibody which binds to an epitope comprising -[OCH_2CH_2]- moieties.

40. A monoclonal antibody AGP3 which is produced by hybridoma having deposit number CCTCC-V-200001.

41. A hybridoma having deposit number CCTCC-V-200001.